Det Bal Lak & Wndsr
Ferry Co
97

THE MARINE RECORD,

DEVOTED TO COMMERCE, ENGINEERING AND SCIENCE.

VOL. IX NO. 31. CLEVELAND, O., AUGUST 4, 1887. $2.00 PER ANNUM SINGLE COPIES 5 CENTS

AROUND THE LAKES.

CLEVELAND.

Captain W. D. Robinson, supervising inspector of this district, was in the city Tuesday.

The new steamer Roumania is making good time, and giving entire satisfaction to her owners.

Captain Huntoon will raise the wrecked schooner Republic, recently purchased by Thomas Axwothy.

J. H. Grover & Son will furnish the outfit for the propeller Northerner, and new sails for the Barker and Republic.

The has been a great deal of complaint among vessel men of late about poor service on the part of Cleveland tugs at night.

Frank Wright, the popular and enterprising manager of the Cleveland drydock, went to Detroit Tuesday evening on business.

The schooner Highland Maid, which has been sued in the United States district court for $325 for salvage, will be sold to pay the claim.

The barge Kate Wiuslow will again be advanced to the honors of a full-rigged schooner. She is getting her new topmasts at the Cleveland drydock, and Grover is making the sails.

The scow McDonald, which has lain on the bottom at the upper end of the old river bed, has been sold to Messrs. Pickands and Mather, and by them is to be used for a fuel boat.

The Cleveland Drydock Co. is making a new mainmast and two new topmasts for the Columbia; a new foremast and two new topmasts for the J. H. Rutter; new foremast and mainmast for the Barker.

It is said that Jim Wallace, draughtsman for the Cleveland Shipbuilding Co., did not attend very closely to business this week because the doctor brought a new boy to the house. We don't know how much it weighs.

The new barge Joseph P. Farnan got away Tuesday evening, in tow of the tug Jas. Amadeus, for Kelly's Island to load stone for the breakwater. It is estimated that she will carry on her deck 150 cords of stone. Her tonnage is 409.74 gross, 346.53 net.

The tugs American Eagle, C. E. Bolton, W. H. Doan, and J. R. Worswick withdrew from the Black Stack line of harbor tugs Monday. The reason given was that they could not get satisfactory settlement and make it profitable to belong to the association.

Murphy is having some trouble in trying to Americanize his Canadian boats, the Upper and Josephine, recently repaired here. The papers sent to Washington have been returned, as they were not properly filled out. The customs officers here think he will not succeed in making American boats of them.

Captain George Stone, who has been on Lake Michigan for some weeks in the interest of the sunken propeller Selah Chamberlain, denies the current reports that shallow water prevents Sheboygan, Wis., from becoming a good harbor. Captain Stone says that there is 20 feet of water for a distance of 1,000 feet, and 13½ feet up to the coal docks.

The propeller Raleigh, which was furnished with new boilers by Riter last winter, a new wheel by Trout, and had cylinders bored out by the Globe Iron Works Co. has been making excellent time this season. She made the round trip from Fairport to Ashland and return with schooner Polynesia in tow inside of ten days. The aggregate cargoes amounted to 3,100 tons. Paul Surrat, master; Warren Smith, mate; and Harry Eardley, engineer, make a good trio.

Much talk over quick trips, etc., has been indulged in, but the steamer Cambria "takes the cake." Captain Wm. Cummings and Engineer H. F. McGinniss make a good team. In the thirty-one days included between July 2 and August 1, this boat has loaded six cargoes of ore at Escanaba for Ashtabula, the dates being July 2, 9, 15, 21, 27 and August 1. The cargoes average a little over 2,400 tons. Although the Cambria has extraordinary facilities for discharging cargo, this must be considered the best time on record for six full cargoes of ore between the two points mentioned.

Meteorological summary for the week ending August 3:

Mean barometer	29.23
Mean temperature	76.5
Mean humidity	65.
Total precipitation, inch	T
Prevailing direction of wind	S.E.
Total wind movement	909
Av. cloudiness	.4
Av state of weather	Clear.
Max. temperature, highest	93.
Min temperature, lowest	61.

WILLIAM LINE, Sergt. Signal Corps, U. S. A

Schooner Senator Blood, Captain C. Glass, has been chartered, coal, Cleveland to East Saginaw waterworks, at 70c. This is the highest freight paid between these two points in ten years.

Captain Peter Minch, W. J. Trinter, J. W. Nichols and others have closed a contract with Wm. Radcliffe for a new steamboat, 275 feet keel, 40 feet beam, and 23 feet depth of hold, to be completed by the opening of navigation next year. She will have a triple expansion engine, to be built by the Cleveland Shipbuilding Co. The new boat will cost about $140,000.

Yesterday's lake freight market was a repetition of the story of the past several weeks so far as coal is concerned, more carriers wanted than were offered. There was also a light demand for ore tonnage. The call for both was at unchanged rates. Vessels chartered were steamer Henry Chisholm, coal, Buffalo to Duluth, 75c; schooner Porter, ore, Escanaba to Sandusky, $1.45; schooner David Wagstaff, ore, Marquette to Cleveland, $1.90; schooner Narragansett, wheat, Sandusky to Buffalo, 2¾c.

Captain Thomas Wilson has made innumerable changes, and his office now presents the appearance of a parlor. The partition dividing the reception room from his private office has been torn away and both offices turned into one, making quite a roomy place for the transaction of business. In doing this it was found necessary to add another room to the suite, which was done, and now Captain Wilson can be found at all hours transacting business. On entering the private sanctum of Captain Wilson one at once forms the idea that he likes soft carpets, and plenty of room to work in, and before going away finds that, while he remains closely at his desk, he gets reports of everything of interest transpiring on the lakes.

A libel suit has been entered in the United States district court against the tugs Patrick Henry and R. K. Hawley. The complainants, James Wallace, Frank B. Wallace and Sarah E. Hudson, of Detroit, sue for $1,425 damages sustained by virtue of an accident to the schooner H. A. Kent while being towed by the tugs from the old river bed to the lake on November 14, 1886. The schooner collided with the schooner Sweetheart, which was moored to the dock in the river opposite the old river bed, and it is claimed was damaged to the amount of $375 and laid in the drydock for repairs eleven days, thereby causing its owner to lose $1,050 that they would have made with the use of the vessel. The tugs are in the hands of the United States authorities, to remain until the bond, which is double the amount of the claim, is furnished. The bond was furnished and the boats were released.

The schooner J. B. Kitchen and tugs J. D. Dudley and Allie May went into the Cleveland drydock Sunday morning, the Kitchen to stop leak and to have bottom overhauled, and the tugs for slight repairs. The Northerner was let out of drydock Sunday. She holds her shape perfectly, and is well along toward completion. Her rebuild consists of steel arches, all new planking inside, and on the outside from a short distance above her bilge. Frames and planking are all new forward, where her light draft allowed her to be burned lower. Her boilers have been hoisted to her spar deck and put in excellent shape. The rebuild has cost the owner, Captain Tom Maytham, of Buffalo, $35,000. This, with the purchase price, the cost of getting her up, towing her to Cleveland, removing burned cargo, etc., makes Maytham's total about $55,000. The schooner Ahira Cobb went in drydock to have a leak stopped and the Republic to get a rebuild.

MILWAUKEE.

Special to the Marine Record

Your correspondent missed one good old face when looking around. It was that of Mr. James Sheriffs, of the Vulcan Iron Works, the propeller wheel and engine manufacturer, who died about two weeks ago, and left behind him very many friends who would have been pleased to meet him many more times, and in whose hearts his memory will ever have a place. His sons will carry on the business.

The Milwaukee Shipbuilding Co. are having a splendid drydock built, which is to be completed by December 1st. It will be 310 feet in length, 72 feet wide at top and 47 feet wide at bottom. They are building a handsome steambarge for John B. Merrill, Geo. C. Markham, G. D. Norris & Co., John Fitzgerald, Frank Keating, and Captain Albert Gibbs, who will sail her. She is 230 feet long over all, 215 feet keel, 34 feet 10 inches beam, 20 feet depth of hold. She is constructed as follows: Main keelson 14 by 32, rider keelson 13 by 24, assistant keelson 12 by 13 each, twelve floor keelsons 10 by 12 each, three bilge keelsons on each side from 7 to 12 inches; frames of 6-inch flitch, 15 inches in center, 13 inches deep at the bilge, and 7½ inches at the head; treble floor on every other frame; frames 21-inch centers; ceiling, four strakes of 6-inch, three strakes of 5-inch, balance 4 inches; two strakes of upper clamp 5 inches, shelf pieces on lower deck 30 inches wide, two strakes of 5 inches, one of 6 inches; upper shelf piece 29 inches wide, two strakes 4 inches, one 5 inches; under deck frames 9 by 10 inches; upper deck frames 6 by 8 inches; outside planking, two strakes of 6-inch garboards, balance to rail 5 inches, all through fastened with two spikes on each frame; steel straps all around on the outside, just below the plank sheer, 16 inches wide ¾-inch thick, steel straps running down from it forward and aft, 5 inches wide, ½-inch thick. She will have five hatches and carry three masts. Trout, of the King Iron Works, Buffalo, is building for her a fore and aft compound engine, 22 by 40 and 40 by 40, and R. Davis, of Milwaukee, is building for her a boiler ¾-inch thick steel, 16 feet long, 10 feet diameter. She will have the American Ship Windlass Co.'s capstan and windlass, and will be fitted with all the modern improvements, and will be launched early in September. She can be purchased.

The Milwaukee Shipbuilding Co. are rebuilding the steamer Grace Grummond and converting her into a tow barge. They will also rebuild the steamer Champlain for passenger and freight service, and will lengthen her 30 feet amidships and widen her 3 feet at the bilges, making her 166 feet keel, 30 feet beam.

Wolf & Davidson will launch another monster steamship on Saturday, August 7, to be named the U. H. Wolf, after one of her well known builders. Full particulars of the launch and her dimensions will be given in next week's MARINE RECORD.

WILLIAMS.

MILWAUKEE.

J. H. Pauly, of Milwaukee, has bought of the Baltimore Steam Packet Company the iron steamer Westover for $7,000, and the wooden steamer Roanoke for $5,000. They will be brought around the coast from Baltimore to the lakes. The Westover, 416.38 tons, is 163 feet over all, 28 feet beam and 12 feet depth of hold. She was built at Wilmington, Del., in 1873. The Roanoke, 431.39 tons is 167.7 feet over all, 27 feet beam, and 9.3 feet depth of hold, and was built at Wilmington, Del., in 1871.

The Great Lake Steamship Company was incorporated here Tuesday. The incorporators are H. S. Benjamin, C. F. Rand, and W. Turner, all members of the Lake Superior Consolidated Iron Company. The object of the business is the building and operation of steamships, it being intended to carry as much of their own ore as possible. The capital stock is $4,000,000.

CHICAGO.

Special to the Marine Record.

Grain freights were firmer Tuesday: Wheat to Buffalo being quoted at 3⅛ cents. Canal rates remained unchanged. There was not an urgent demand for room, and the tonnage offered was equal to it. The present rate on ore is so advantageous as to keep many vessels out of the grain trade. The consequence is that grain carriers are frequently chartered "for arrival."

The steamer Vernon, has been chartered by the Northern Michigan line, to take the place of the steamer Champion.

Captain E. J. Lynn, has been appointed night superintendent of the Vessel Owners' Towing Association. He is a very able young man and should fill the bill well.

At the Chicago drydock company's, the schooner George Steel, was in to have a leak stopped; the schooner Vega for bottom calking; the schooners Harvey Bissell and Mary Collins, had top sides calked; the steambarge Swallow, was in dock for a new Trout wheel; the steambarge Rhoda Emily received a new gaff; the propeller Coffinberry, some repairs; the schooner Westchester, had her bottom calked; the schooner John Kelderhouse, had her top sides calked.

At Miller Brothers' drydocks, the schooners Orkney Lass, Radical and N. H. Ferry and steambarge Monitor were in dock to have leaks stopped; the steambarge Thomas R. Scott, for a new rudder; the scow A. R. Kellog for recalking; the propeller Monohansett to have wheel fastened; the schooner City of Sheboygan is in dock for a general overhauling; the schooner Antelope, for some new plank in bottom and calking.

Chief harbor master Irwin, had a gold star set with a fine diamond, presented to him on Monday last, by some of his friends. It must have been given to him for "short" service, as three months have not elapsed since he received his appointment.

A great deal of fuss is being made about the new bridge ordinance arrangements, worked by telephone and in many instances hindering vessels unecessarily when endeavoring to get up and down Chicago river. It would be more to the credit of the city authorities if they would have both draws of several bridges dredged so that vessels could go through and thereby dispense with crowding and present delay. WILLIAMS.

The restrictions which are being crowded upon vessel men by the bridge question are cropping out on all sides. The utmost dissatisfaction is evident everywhere. As going to show how far the feeling has reached and how deep rooted it is, the following expression of opinion on the subject by Ira H. Owen, "I tell you I am disgusted with Chicago and its river. I have the steamers Rhoda Emily, Inter-Ocean, and Argonaut under contract to carry ore from Escanaba to the docks of the Union Steel Works. It is a good contract—$1 per ton, free out. I will give $5,000 cash for the cancellation of that contract. I may have to call one or two of my other steamers in to help me out on this contract, but when it is once off my hands I'll run the fleet high and dry on the rocks before I again contract, to go into the Chicago trade. The new boat the Owen I'll run into Ohio ports, also the Escanaba. Were I called upon again to put in a bid on the contract I am now anxious to rid myself of, I would ask an advance of 50 per cent per ton on account of the bridge hindrance.

[*Continued on 5th page.*]

MARITIME LAW.

PERSONAL INJURIES—UNSAFE LADDER TO HOLD OF VESSEL—SHIP OWNER'S KNOWLEDGE OF CONDITION OF LADDER—LIBELANT'S KNOWLEDGE—CONTRIBUTORY NEGLIGENCE—DAMAGE PARTLY ALLOWED.

U. S. District Court, Eastern District of New York.

1. Libelant, a stevedore, in descending a ladder which led to the hold of the bark Truro, took hold of a batten which had been nailed across the ladder in place of a missing round. The nails pulled out and libelant fell to the bottom of the hold receiving injuries for which this suit was brought. The ladder was furnished by the ship owner, who knew for what purpose it was to be used. Libelant did not scrutinize the ladder before using it. Held, that in providing an unsafe ladder, the ship owner had failed to discharge a duty that he was under to the libelant, and was guilty of negligence. Held, also, that the libelant was as well able to judge of the security of the ladder as the ship owner, and, in failing to scrutinize it before using it was guilty of contributory negligence.

2. But as libelant's negligence was not wilful or gross or inexcusable. Held,—following the Explorer, 20 Fed. Rep. 135; the Max Morris, 28 Fed. Rep. 881,—that he should recover a portion of his damages, viz: the wages he would have earned but for the accident.

Benedict J. This is an action to recover damages for personal injury. The facts are not in dispute.

The libelant was employed by one John Delaney, a boss stevedore, to work for him in stowing cargo in the hold of the bark Truro; the stowing of which cargo was to be done by Delaney, under a contract between him and the ship's owner.

The means of access to the hold from the ship's deck was by a movable ladder, placed in the main hold and reaching from the deck to the cargo in the hold, the ladder raised in the hatch. It was a poor ladder Some of the rounds were gone, and about two and a half feet from its upper end, and as it stood in the hatch at the time of the accident, was a batten fastened at each end to the side piece of the ladder by nails. When the stowage of the cargo began the batten was near the coaming of the hatch, and there the coaming instead of the batten would be likely to be clasped by the hands of any one going into the hold. On the morning of Monday this batten was some three feet above the coaming, and the libelant in preparing to descend the ladder to go to work, took hold of the batten with his hands, when placing his feet on the rounds below. The batten gave way, the nails on one end breaking and the libelant was precipitated into the hold some eighteen feet below, receiving serious injuries, for which this action is brought.

During two days before the accident the ladder had been used as the means of access to the hold by the various stevedores, including the libelant, and no accident occurred until the libelant fell. The libelant says he knew the ladder was bad, and for that purpose he had used care when going up and down it. There is no evidence from which to conclude that any person had used the batten before the libelant did.

Upon these facts it must be held that negligence on the part of the ship's owner has been shown.

The ladder was furnished by the ship's owner, knowing that it was to be used by the stevedores who might load the cargo. It was an unsafe structure, calculated, as shown by the accident, to inflict great bodily harm. It was the duty of the ship's owner to provide the stevedores who were to load the cargo a safe means of access to the hold. This duty he undertook to perform by providing the ladder in question. When, therefore, instead of a proper ladder he provided. the unsafe ladder, that caused the libelant's fall, he failed to discharge an obligation he was under to the libelant, and was guilty of negligence which renders him responsible to the libelant for the result of that negligence.

The next question raised is whether the libelant was also guilty of negligence in trusting the batten in the way he did. I incline to the opinion that he was. In this instance it was not the method of securing the ladder in its place that caused the injury, neither was it the general bad condition of the ladder. In general the ladder had proved sufficient when used with care. The particular defect which caused the libelant's fall was the insecure condition of the fastening that attached the batten that gave way to the sides of the ladder. If this batten had been properly secured the ladder would have supported the libelant, and no accident would have occurred. The batten was, however, insufficient in size, or because the nails had become loose by use.

As to the security of the fastening of the batten, at the time the libelant used it, he was as well able to judge as the ship's owner. Any defect in the nailing that would have appeared to any one, would have been as apparent to the libelant as to the ship's owner. If the ship's owner is chargeable with knowledge of the insecure condition of the batten, the libelant who used the ladder is chargeable with the same knowledge. No person is justified in trusting himself upon a ladder without giving it that reasonable scrutiny which any person of ordinary intelligence about to use such a structure would naturally give it. If the libelant had scrutinized the batten to any considerable degree before trusting to it, he would have learned that it was insecure and would have put his hands on the sides of the ladder, instead of on the batten. and so reached the hold in safety. His failure so to scrutinize the batten before trusting to it was negligence.

The negligence on the part of the libelant in omitting all scrutiny of the batten, although evident, as it seems to me, was neither wilful nor gross, nor inexcusable. He is therefore entitled to recover a part of his damages. By means of his injuries he was rendered unable to do any work for five months, and he has never since the accident been able to do full work. His medical treatment was furnished by the hospital without charge.

Following the precedent of the Explorer, 20 Fed. Rep. 135. and the Max Morris, 28 Fed. Rep. 881. I allow him nothing for his pains and suffering, but allow him for loss of wages that he would have earned but for the accident; I think $500 will cover the loss. Let a decree be entered in his favor for that sum, with costs.

June 8, 1887.

A DANGEROUS MAN AT LARGE.

TEASPOON CORNERS. N. Y.,
July 21, 1887.

Sepcial Correspondence to the Marine Record:

Once again I breathe republican air, or in the language of Sippio, "I breathe the air of freedom." True, I did not serve my time out, but the jail management seems to have drifted into a complicated mass, as the following extracts from a note from the jailor, which I found shoved under my door the other morning, will explain:

"You will find the key," said the letter, "under the door mat, in front of your cell, so just reach your arm through the grating and liberate yourself, and, as you go forth, think of me. Do not think that there has been any influence brought to bear in your favor; the simple truth is, the commissioners have got into a tangle, and the grocery men have refused further credit, so, if you are not liberated, you will starve, and such infinite genius as you possess ought not to be starved. Try and think of me kindly, for, by the time you read these lines I shall be in Canada. Remember, that as I go forth from the United States, to reside forevermore in a foreign land, I take with me the blessings of the people of Tea Spoon Corners; likewise, ten thousand dollars of their good money, for, as treasurer of the town, my credit was unlimited. When you pray, drop a thought, a prayerful thought, for me."

I am now fully decided what I shall do. I am going to Port Huron and spend a week or so with Henry Burton and Jim Fitzgerald, both of whom have written me such lovely letters. I have had my photograph taken, and shall try to sell them on the way, but if you want one, Mr. Editor, I will give you one, free gratis for nothing, and without charge.

Mr. Editor, I am happy. I can't say but what I am just about as happy as I ever was in my life, for I have resolved once more to labor and to trust, and get trusted if I can. Send all contributions to Port Huron, in care of H. W. Mains.

THE SECOND ENGINEER.

SCREW PROPELLERS.

It is difficult to exaggerate the value of measured mile trials as tests of the efficiency of propellers. In speaking thus, all kinds might be included; but for the present we refer only to screw propellers. Most persons who have studied the mathematical theories of the action of the screw propellers have reached the conclusion that experiment alone can be trusted in the determination of the dimensions and forms of the screws suitable for a certain set of conditions. This becomes abundantly evident when one has to go beyond precedent, and to deal with higher speeds of ships and propellers than have been attempted previously. In the construction of torpedo boats the selection of the best screws has involved the carrying out of long and costly experiments. The discoveries made during the trials of H. M. S. *Iris* were startling, showing as they did, that by simply varying the screws—all other conditions remaining practically unchanged—the speed of the ship was increased from 16½ to 18½ knots per hour. More recent trials of very swift ships have shown no less remarkable results. Nor is it reasonable to suppose that this possibility of improved performance by changes in screws holds good only for very swift ships. Cases have come to knowledge where, through accidents to their screws, cargo steamers have been left with very seriously diminished blade area, and yet have performed well.

These observations tend to throw doubts upon the ordinary assumption that the screws actually fitted to cargo steamers are the best possible screws. Any one interested in such vessels who makes the matter a subject of experiment, will probably be amply repaid for his trouble. When regard is had to the economies which have actually been obtained by means of speed trials with various screws, and to the straining after economy in all directions, which has become essential under the present condition of the mercantile marine, it does appear desirable to devote greater attention to possible improvements in the screw propellers of cargo steamers. And if we may venture one step further, we would suggest the possible advantage of increasing the revolutions and piston speeds in such vessels. Savings in weight of machinery, if they can be made without decrease in strength and durability, must be advantageous.—*Engineering.*

CHICAGO HARBOR.

The report of Major Handbury, engineer in charge of the Chicago harbor and other western improvements, has been received. It is a voluminous document. He reviews the work of the last twelve months in the construction of the cribs. His remarks upon the durability of the work are interesting. It will cost, he thinks, $25,000 annually to keep the present kind of breakwater in repair. The cribs which are under water will last an indefinite period, but the cribs which are partly above and partly under water will not last more than twelve years. He indorses the report made by a board of engineers within a few months, the purport of which he does not specify, but, judging from the context the board recommends the use of permanent material. The material would seem to be artificial stone or concrete. Reference is made to the fact that material of this sort has been used with success in Scotland, where the climate is severe and the storms are great. It will cost $17 the lineal foot to renew the superstructure with temporary cribbing such as is now in use, which will last only twelve years, and it will cost $23 to do the same work with the permanent material, which will last indefinitely. Major Handbury recommends the permanent material. He asks an appropriation of $240,000 to complete the present project for the harbor, and would like to have the appropriation all made next year. He asks for $120,000 to replace nearly a mile of superstructure which is now badly decayed, and which is liable to break away whenever there is a bad storm.

He asks for a large sum for Calumet harbor. There has already been $8,000 appropriated for Calumet river, which has not been used, owing to the fact that it has not been possible to secure the title and the right of way. There is a prospect that this will soon be done, and the lawyers are now looking into the matter. He discusses at great length the Illinois river improvement. He describes the work already completed and dwells upon the importance of having continuous water communicaton between the great lakes and the lower Mississippi. He considers it of much importance that there should be such communication, by means of which large steamers and gunboats of good size could pass through. The route from Chicago to New Orleans by water is 1,620 miles. Of this great distance there is now complete water communication for 1,520 miles. Over that distance vessels of considirable size can already pass. He urges an appropriation of $10,000 to make further surveys in detail over the remaining one hundred miles from Joliet to Lake Michigan, with a view of determining the best route. No survey has been made of the Hennepin canal this year.

M. E. B. A. NOTES.

The following is from a Detroit paper of recent date: When the Alaska stopped at Sandusky recently, on her way up, a merchant of that city, accompanied by his wife and little son, attempted to board the steamer. The light of the household in crossing the gang-plank collided with some freight and took an involuntary header into the water. John Galway, the engineer, could not see the missing youngster, but dove for him and landed him, half drowned, on the steamer. In the ecstasy of her delight the mother hung about the neck of the gallant rescuer, and the engineer was, in turn, rescued by the deckhands. Then the father insisted on taking Galway to his state room that fitting reward might be given for his services. The engineer declined, but declinations didn't go. The overjoyed "parient" couldn't rest until he had properly evidenced his gratitude. The dripping engineer went to the state room, heard reiterated expressions of undying thanks, and was then handed a silver dollar—just a plain, old-fashioned dollar of our dads. Galway made his escape and the company says the coin will be retained as a reminder, for they are satisfied that, had the youth been drowned, there would have been a $10,000 lawsuit over a dollar boy. The absence of soul is not confined to corporations.

The above is just like Chief Engineer Galway, of the Alaska, a young man of brilliant attainments, gentle as a woman, yet brave as a lion.

President Wilson, of No. 6, is engineering on the Missouri in the mountain trade, and in a private letter he says that musquitoes sing night and day, and that a man has to work with a boiler-iron net on.

LITERARY NOTICES.

ST. NICHOLAS FOR AUGUST.—The number opens with a beautiful frontispieee, by Mary Hallock Foote, illustrating some bright verses by Edith M. Thomas, entitled "Invitation to Echo;" and the illustrator turns author a little farther on in a charming sketch of Rocky Mountain life, called "An Idaho Picnic," with more pictures in her characteristic style. Another artist tells his own story with pen as well as pencil in this number—George Wharton Edwards, who writes and draws pictures for "The Figurehead of the James Starbuck," a capital sea story told ashore. "A Great Battle in a Forest" is the title given to General Adam Badeau's account of the great battle and confederate victory of Chancellorville, where Stonewall Jackson received his death wound, and Major Keenan won immortal fame by his gallant charge. Of the continued stories, "Winning a Commission," and "Jenny's Boarding-house" are concluded, happily, of course, and Juan and Juanita are brought almost to civilization and home by Miss Baylor.

THE ATLANTIC FOR AUGUST.—This number is one of the best of the volume, and well bears out the reputation the Atlantic has gained. The contents include: "Personal Characteristics of Charles Reade," E. M. House; "The Growth of Materialism," George Frederic Parsons; "The Second Son," M. O. W. Oliphant and T. B. Aldrich; "Jean Francois Millet," Graham R. Tomson; "Two Years with Old Hickory," Thomas H. Clay; "The Spell of the Russian Writers," Harriet Waters Preston; "Our Hundred Days in Europe," Oliver Wendell Holmes; "Paul Patoff," F. Marion Crawford; "The Alkestis of Euripides," William C. Lawton; "The Goophered Grapevine," Charles W. Chestnutt; "To E. M. T.," Alice Williams Brotherton; "A Mad Englishman," Margaret Crosby; "Anne Gilchrist;" "The Contributors' Club," and "Books of the Month." Houghton, Mifflin & Co., Boston, Mass.

THE CENTURY FOR AUGUST.—The midsummer holiday number of The Century opens appropriately with an attractive paper of holiday adventure, having the piquant title of "Snubbin, Through Jersey," the object of which is to report the incidents, mishaps and delights of a unique vacation trip in a canal boat. A paper of more remote adventure is contributed by Gen. A. W. Greely, who describes an episode of the Lady Franklin Bay Expedition under the title of "Our Kivigtok," a kivigtok being, in the language of the explorer, a man who has fled mankind and through a solitary life amid nature's surroundings has acquired a gift of clairvoyance. A feature of the number is the beginning of a three-part story by Joel Chandler Harris, entitled "Azalia,', and illustrated effective y by Kemble. The Lincoln History is devoted to Lincoln's Cooper Institute speech and other political events of 1859 and 1860. The Battle Series, as heretofore announced, is making rapid progress toward conclusion, two important articles appearing in the present number, namely: "Opposing Sherman's Advance to Atlanta," by General Joseph E. Johnson, and Hood's Invasion of Tennessee," a popular narrative by Colonel Henry Stone, formerly of General Thomas' staff.

LAKE SHORE & MICHIGAN SOUTHERN

Commencing Monday, May 16, 1887. The time given in the figures below is the new standard (Ninetieth meridian) time, which is thirty-three minutes slower than Cleveland time proper.

Eastward.	Arrive	Depart.
No 4, Fast Limited Express	*2 55 A M	*2 55 A M
No 8, N. Y. B & A Express	*8 30 A M	*8 55 A M
No 26, Elyria Accommodation	†7 45 A M	
No 24, Buffalo Ac'm via Sandusky	†10 30 A M	†10 45 A M
No 24, Toledo Accom via Norwalk	†10 30 A M	†10 45 A M
No. 10, New York & Boston, "Flyer"		*11 35 A M
No 12, N Y & B Fast Express	*2 20 P M	2* 45 P M
No 2, Night Ex via Norwalk	9 40 P M	†10 00 P M
No 22, Night Ex via Sandusky	†9 40 P M	
No 26, Conneaut Accommodation	†4 25 P M	

Westward.	Arrive.	Depart.
No 1, Fast Limited Express	*12 15 A M	*12 15 A M
No. 23, Cleveland Express	*2 15 A M	
No 3, Chicago Express via "	‡5 20 A M	5 35 A M
No 25, Mich Accom Norwalk		†5 35 A M
No 21, Toledo Ex via Norwalk	†12 50 P M	†3 20 P M
No 5, St Louis Ex via Sandusky	*10 50 A M	*10 55 A M
No 9, Chi Pac Ex via Norwalk	*6 15 P M	*6 40 P M
No 31, Elyria ac to Elyria only		†4 30 P M
No 27, Conneaut Accommodation	†8 10 A M	

Sunday train for Nottingham—Depart 8:15 a. m. and 1:45 p. m.; returning, leave Nottingham at 8:50 a. m. and 3:45 p. m.

Reference marks—* Daily, † daily, except Sunday, ‡ daily, except Monday.

A local Cleveland and New York sleeper, also sleeper for Boston, and dining car daily on No. 10, leaving Cleveland at 11 35 A M.; arrive Grand Central depot, New York, 7.30 a. m.

For full information as to trains and counections apply at the Union ticket office, corner Bank and Superior streets, under Mercantile Bank.

M. E. GAUL, City Passenger Agent.
A. J. SMITH, Gen'l Pass. Agt., Lake Shore Block

McKINNON BROS.

Ashtabula Harbor, O.,

Machinists, Shipsmiths & Steamfitters;

ALSO, DEALERS IN

Engineers' Supplies, Lubricating and Burning Oils.

BUSINESS PROMPTLY ATTENDED TO.

FOR SALE,

A POWERFUL RIVER AND HARBOR TUG.

Length 95 feet, breadth 17 feet, depth 9 feet, draws 9 feet. New tonnage 40, old 81. Engine 22x24. She is allowed 90 pounds of steam. Has new main valve, new throttle valve, new eccentrics, two new tow posts, four new timber heads, one new metallic life boat and new wheel, ironed al, around for work in ice. Cabin, pilot house and engine room remodeled. Can carry sixty (60) tons fuel, has forty life preservers, water-tight bulkheads, and is allowed to carry passengers. She rates A2, valued in Lloyd's at $10,000, and is warranted in first-class shape. Address MARINE RECORD OFFICE,

STEAMBARGE FOR SALE.

This is one of the finest steambarges on the lakes, and was built in 1884. She is in good condition in every respect, serviceable, easy to load and unload, and a great favorite. She can not be duplicated for the same money. Her dimensions are 131 feet keel, 143 feet over all, 23.4 feet beam, 8.4 feet depth of hold, and is classed A1½ by Inland Lloyds. She carries two masts. Her carrying capacity is 400 to 425 tons or 14,000 bushels of wheat, or about 240,000 feet of lumber on a draft of 9 feet 9 inches. Her engine is high pressure 18x20 and her boiler 6½x12 feet of 7-16 Otis steel. Speed 10 miles loaded or 11½ light.

Address MARINE RECORD, Cleveland, Ohio.

AN IRON MINE FOR SALE.

This mine is on the shores of Lake Huron, close to a good harbor. First-class ore, assayed 70 per cent pure iron. This ore is said by experts to be much better than Lake Superior iron ore. and the only ore of its kind so far discovered on this continent capable of making Bessemer steel. Will sell outright, on shares or a royalty. Specimens of ore furnished and inspection of mine solicited.

Also, two silver mines on Lake Superior, close to a good harbor. Specimens furnished. Apply to MARINE RECORD, Cleveland, Ohio.

HARBOR TUG MOLLIE SPENCER.

ENGINE, 20 by 24, Port Huron, Mich. For light wrecking this tug has the most complete outfit on the lakes. Supplied with steam ejectors, capacity of 32,000 gallons per minute, hawsers, steam pumps, diving rigs, blocks etc., just the outfit for waterlogged and sunken boats, at cheap rates. River and harbor towing. Telephone, telegraph.

LYNN'S TUG OFFICE.

TUG FOR SALE.

Length over all, 52 feet; beam, 13 feet; depth of hold, 5 feet 8 inches; net tonnage, 7.38. Engine, 10x12; upright steel boiler. One year old, and in first-class order. Address,

JAS. LAIRD, Ashtabula Harbor, O.

H. D. COFFINBERRY, PRES'T. ROBERT WALLACE, VICE PRES'T. WM. M. FITCH SEC'Y.

THE CLEVELAND SHIP-BUILDING COMPANY,

Detroit and Center Streets, Cleveland, Ohio,

IRON SHIPS,

Marine and Stationary

ENGINES AND BOILERS,

Blowing Engines and Steam Hammers,

AND MILL GEARING AND CASTINGS.

We take pleasure in announcing that we have purchased the property, business and good-will of the Cuyahoga Steam Furnace Company, and will add to these works, so long and favorably known, a first-class Iron Ship-building Department, with sufficient room and all modern facilities for building two large vessels at the same time, and a Boiler Shop with most approved tools for large work, including Tweddell's Hydraulic Plant for flanging, riveting, etc.

We have associated with us Messrs. H. D. Coffinberry and Robert Wallace, late of the Globe Ship-building Co., and the Globe Iron Works, and Wm. M. Fitch, late of the Winslow Line of Steamers. We have made the following appointments: Mr. O. N. Steele, Assistant Superintendent; Mr. Thomas W. Bristow, late foreman of Wyandotte Ship Yard, Superintendent of Ship Yard; Mr. Quincy Miller, Superintendent of Boiler Shop; Mr. John Stoney, Superintendent of Foundry, and Mr. Jas. C. Wallace, Draughtsman.

We purpose building Iron and Steel Vessels of all descriptions, Marine and Stationary Engines and Boilers, Blowing Engines, Steam Helve Hammers and such other work as our large assortment of patterns eminently qualify us to build, at a minimum price.

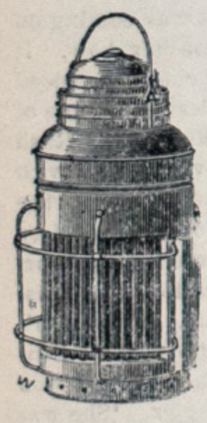
Your patronage is solicited, and we trust that the excellence of our work, with fair dealing and strict attention to business, will secure its continuance.

THE CLEVELAND SHIP-BUILDING COMPANY.

SIGNAL LAMPS

For Steamers and Sailing Vessels.

PATENT FLUTED LENS AND PERFECT COLORS.



GET THE BEST AND AVOID COLLISIONS.

These Lamps give a more brillant light than any Signal Lamp now in use.

They have been adopted by the principal Ocean and Lake Steamers

Over Ten Thousand Now in Use.

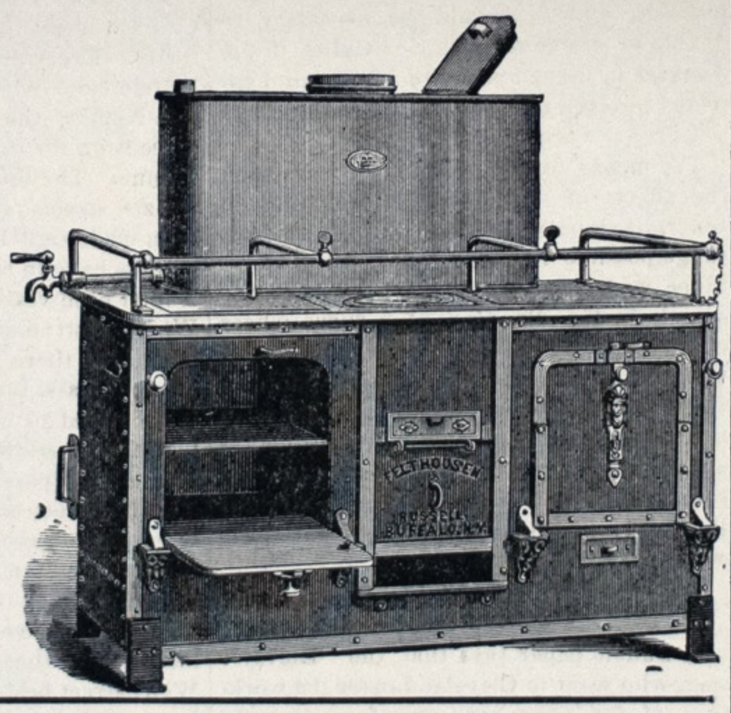
WE ALSO MANUFACTURE THE CELEBRATED

French Wrought Iron Ranges and Broilers of all Sizes for Steamers and Hotels.

Steamboat Copper, Tin, and Sheet Iron Workers.

FELTHOUSEN & RUSSELL,

139 & 141 MAIN ST., BUFFALO, N. Y.



Cleveland Dry Dock Co,

Shipbuilding, Drydocking, Repairing and Spar Making.

CLEVELAND, OHIO.

MARINE REPORTER AT THE STRAITS.

Reports of Passing Vessels a Specialty.

Messages Delivered to Passing Vessels Day or Night, Weather Permitting.

MY ICE REPORTS MAY BE RELIED ON.

SEVENTEEN YEARS EXPERIENCE.

The Patronage of the Marine Public Respectfully Requested--Charges Reasonable.

F. J. STIMPSON, MACKINAW CITY MICH.

Established in 1859.

HENRY LEOPOLD.

Manufacturer and Dealer in all kinds of fine and plain

FURNITURE & UPHOLSTERY,

And Manufacturer of Counters, Shelving, Bank and Bar-room Fixtures.

Mattrasses and Vessel Furniture

A SPECIALTY.

Warerooms 798 and 800 Lorain-st, near Fulton. Factory 10 Willet-st.

CLEVELAND, OHIO.

WM. H. RADCLIFFE,

Shipbuilder and General Repairing.

OLD RIVER BED, Ft. OF TAYLOR St.,

CLEVELAND, O.

DETROIT BOAT WORKS.

BUILDERS OF

STEAM AND SAIL YACHTS, RACING SHELLS AND HUNTING CANOES

SOLE MANUFACTURERS OF

Clark's Patent Metallic Life Rafts and Wooden Life Boats.

YAWL AND ROW BOATS of all sizes in stock. Steam and Hand Steering Wheels made to order. SHOPS, FOOT DEQUINDRE ST., DETROIT, MICH. TELEPHONE No. 1154.

WARD AND JACKSON,

SHIPSMITHS,

All Kind of Forgings, Bolts and Truss Rods for Building.

49 Main-st Cleveland

THOS. DREIN & SON

BUILDERS OF

METALLIC LIFE BOATS

and LIFE RAFTS of all classes Government and Pleasure Boats of Wood. Block Cork Life Preservers. Sole manufacturer of Capt. JONATHAN CONE'S celebrated

Patent Life Rafts

Tatnall-st and Railroad, Wilmington Del.

Scott's New Coast Pilot

Corrected for Additions and Changes to the Opening of Navigation in 1887,)

IS SOLD BY

SHIP CHANDLERS

AND BY THE PUBLISHER,

GEORGE SCOTT,

AT 162 LARNED E., ST., DETROIT, MICH

WINDLASS FOR SALE.

The undersigned have a Hadfield Patent windlass or a one and three-eighths inch bar chain for sale cheap.

JOHNSON & BATES,
927 Erie St., Racine, Wis.

CAPT. GEO. A. SIMPSON,

Compass Adjuster,

COMPASSES, BAROMETERS, PATENT LOGS AND MARINE GLASSES REPAIRED,

Schooners can have their Compasses Adjusted for Local Attraction at the time of repairs by stating how much they are out on East or West Courses, and which way it leads, North or South of above Courses

161 River St., Cleveland, O.

ROBERT E. HILLS,

57 & 59 North Wells St., Chicago, Ill.
Telephone 3321.

STEAM FITTING AND HEATING,

Wrought Iron Pipe & Fittings

ENGINEER'S SUPPLIES.

General Jobbing Work Done Promptly.

Also, Proprietor of North Side Brass Works.

Moiles Tug Line.

Sault Ste. Marie, Mich.

Office on WATER ST., 5th door from Canal Park.

Tugs Tom Dowling, Frank Tracy and Laura Gibbs.

All kinds of Tug Work Done with Promptness and Dispatch. Tugs and Lighters Always in Readiness.

RAFT TOWING A SPECIALTY.

Correspondence Solicited.

Marine Record.

Published Every Thursday at 144 Superior Street, [Leader Building] Cleveland, O.

A. A. POMEROY, EDITOR AND PROP'

BRANCH OFFICE:
252 South Water Street, Chicago, Illinois, THOMAS WILLIAMS, Associate Editor.

TERMS OF SUBSCRIPTION:
One year, postage paid.....$2.00
Six months, postage paid..... 1.00
Invariably in advance.

THE MARINE RECORD can be found for sale by the following news dealers:

CLEVELAND, O.—G. F. Bowman, corner of Pearl and Detroit Streets.

Evans & Van Epps, Superior street, Cleveland.

R. A. Castner, 254 Detroit street, Cleveland.

W A. Ford, corner of Bridge and Pearl streets.

ASHTABULA HARBOR, O.—C. Large.

CHICAGO, ILL.—Joseph Gray, 9 West Randolph Street.

CHICAGO, ILL.—H. B. Hansen, 33 West Randolph Street.

BUFFALO, N. Y.—Miss McCabe, Elk Street, near Ohio.

Charles McCready & Co., No. 14 E Seneca St.

Mrs. Mary Jannigan, on Michigan St. Swing Bridge.

DETROIT, MICH.—N. F. Stewart, Ft. of Woodward Av.

STAR ISLAND, ST. CLAIR FLATS, MICH.—McNiff & Son.

DULUTH, MINN.—C. F. Johnson, 323 West Superior Street.

MARQUETTE. MICH.—J. A. Vannier.

ESCANABA, MICH.—Wm. Godley.

ESCANABA, MICH.—George Preston.

SARNIA, ONT.—D. McMasters.

OWEN SOUND, ONT.—J. Sharpe, Jr.

KINGSTON, ONT.—F. Nisbet, corner Brook and Wellington Streets.

Subscribers and others are respectfully invited to use the columns of the MARINE RECORD for the discussion of pertinent topics.

Entered at the Post Office at Cleveland as second-class mail matter.

CLEVELAND, O., THURSDAY, AUGUST 4.

THE MIRAGE OF SOUND.

Some weeks since we published an article on the uncertainty of sound, in order to show that our present system of fog signals are not reliable when we are taught to depend on sound only to locate a vessel and define her course. At the same time we set forth a code of signals, which, if adopted, would serve in a great measure to limit the number of disasters from collision.

In assuming that our present system of determining the course of a vessel is uncertain and embarrassing, we have been guided in great measure by the conflicting testimony of witnesses and employes on steamboats and other vessels (which have been in collision on the lakes) before the United States courts. In many instances the crew of one vessel will testify that fog signals haye been regularly sounded and on the other vessel (party to the collision) the crew will testify that no such sound had been heard. It is evident then that there is some error or desire to deceive in one set of witnesses, or the other. In cases of this kind the judge usually gives credence to the testimony of the witnesses on board the vessel whose signals are under doubt, although the opposition may not have heard any sound from the decks of that vessel. This being true, and the theory adopted, a code of sound signals, where side lights can not be distinguished, designating the course of an approaching vessel, would be practically useless, for the reason that if sound could not be heard the variation of sound in a code of signals could not be distinguished.

A case in point is given in the Century for August, in Memoranda on the Civil War, which asserts that on account of the supposed effect of the wind the sound of the heavy cannonade between the Merrimac and Congress could not be heard over three and one-half miles; while at another time, under different conditions of the atmosphere, the bombardment of the confederate works of Port Royal was heard at St. Augustine, Fla., a distance of 150 miles.

A similar phenomenon was observed by a professor of De Pauw university, during the battle of Gaines Mills in 1862, the valley of the Chickahominy, about one and one-half miles wide, only intervening between the protessor and the battle field. In this battle, perhaps, 50,000 men and 100 pieces of field artillery were engaged, yet while the movements of the men and the smoke and flash of the guns could be distinguished, not a single sound of the cannonading could be heard by the witnesses from their position. Here were conditions capable of providing several belts of air, varying in the amount of watery vapor, (and probably in temperature), arranged at right angles to the acoustic waves as they came from the battle field.

Under the influence of variations of temperature the propagation of various waves may give rise to a sort of mirage of sound, entirely analogous to the well known phenomena of light, resulting from a more rapid propagation in the less dense strata.

The attention of H. Fizean, a learned physicist, has been attracted to this subject by recent collisions at sea between ships presenting the greatest guarantees of safety, and provided with powerful sonorous apparatus, now generally in use, such as sirens, steam whistles, etc. In a paper to the French Academy of Sciences he says:

"If, then, we suppose that, under certain circumstances, the sea is hotter at its surface than the neighboring strata of air, the latter in fair weather must, in the vicinity of the warmer water, take on an arrangement of strata of decreasing temperature, in measure as their distances increase up to a certain height above the level of the water. This is what is ottenest observed at sea during the night, and frequently during the day in foggy weather.

"Under these circumstances, which are precisely those under which the greatest use is made of acoustic signals, the sonorous rays designed to propagate themselves horizontally in the strata of air in the vicinity of the sea necessarily undergo, through the effect of the inequalities in the temperature under consideration, unequal velocities—those nearest the surface of the water getting ahead of those that traverse the strata situated above. Now, as the direction of the rays is always given by a line at right angles with the common tangential plane of the waves, it will be seen that this direction must be successively inflected from below upward, so long as the propagation continues in a direction near a horizontal one.

"This inflection of the sonorous waves, which is not very sensible in the vicinity of the sound's origin, increases greatly with the distance, and at some hundreds of yards may produce considerable of an effect, even with slight variations in temperature in the superposed strata of air.

"In certain cases, for example during foggy weather, fair nights, and a calm sea warmer than the neighboring strata of air, we would obtain still greater differences than these, resulting from the above hypothesis, and it would be necessary to double or treble the electric heights if the decrease in the temperature of the air happened to reach two-tenths or three-tenths of a degree per ten feet of height."

The means to be employed for correcting the effects of this accidental deviation in sonorous signals, and to obtain the greatest range possible in all weather, are obvious. Since we have to fear an inflection of the sounds in the direction of a curve whose concavity is turned upward, it must be advantageous to place the starting point of the sounds on one side and their point of arrival on the other, at a sufficient height above the lower strata of air to allow the sounds to follow their path in a straight line freely without getting out of the space wherein they can be heard.

PNEUMATICS.

A Buffalo paper says that the "Elevator men who went to Cleveland to see the workings of the pneumatic transfer apparatus evidently were not carried away by it. They say that it took ten minutes for the machine to suck up 800 bushels of grain—a 4,800 bushel rate per hour. The party seemed to be unanimous in the opinion that it would be neither advisable or profitable to introduce the pneumatic process at this port."

The object of the exhibition referred to above was not for the purpose of demonstrating the capacity of the Lyman Smith barge Cyclone, but to show its utility. No provisions had been made for a speed test, and it was so understood by the gentlemen present. The speed capacity of the Cyclone has already been shown to the satisfaction of practical men, and demonstrated her ability to elevate and weigh grain at the rate of 300 bushels per minute, with streams of grain flowing through but two pipes, with but a single pound pressure. The capacity is only limited by the power of the machinery applied to the work. Every one of the Buffalo visitors was aware that the small quantity of grain provided for transfer to the barge hopper did not give the Cyclone any chance for an attempt at speed, inasmuch as the greater part of the time in raising 800 bushels was occupied in cleaning up, at which work neither of the pipes could at any time take one-tenth its capacity, any more than can the great elevators Buffalo while cleaning up the hold of a vessel, with all the shovelers employed. There would be quite as much reason in timing the Buffalo elevators in the work of cleaning for their capacity of elevating as in timing a pneumatic elevator for capacity at such work.

This being true, and the quotation printed above regarding the views of the representatives of the elevators being true, there is but one view to take in the premises, and that is that the gentlemen who employ the visitors present at the exhibition (as superintendents of elevators) instructed them to condemn the Cyclone at all events. Basing this conclusion on the fact that the men interested most closely in transferring grain have large investments in the elevators at Buffalo, and are well satisfied with their returns from those investments, they are not prepared to assist in introducing a system to take the place of those elevators, involving such a change as must increase investment, without adding materially to their profits except in the one item of time saved by the greater capacity of the same number of pneumatic barges. For this reason and others which can be called up, it will be believed that the Buffalo visitors struck the truth when they said that it would be "neither advisable or profitable to introduce the pneumatic process at that port." It is said that if you at once admire a Jew's wares he will be disgusted and despair of trading with you; but if you decry their merits he will understand that you are aware of their beauty and bent on having them if your views of economy will permit.

It appears that propositions from the elevating ring have been made for the barge Cyclone and the pneumatic principle which it represents, but with such conditions attached that Mr. Smith, as president, can not accept. In order to reduce the transfer charges between lake vessels and canal boats at Buffalo this pneumatic principle should be adopted as a matter of economy to lake vessels and canal boats; but it should be done with force (capital) sufficient to at once place barges enough in Buffalo waters to take care of all the grain that comes down. The matter of storage in case canal boats are not ready to receive the grain, is of secondary consideration, and could easily be provided for by an unlimited number of iron tanks, air tight, and which could be placed at any available point.

CHICAGO BRIDGE OPENING.

The new vessel dispatching system at Chicago seems to be working quite satisfactorily. Every drawbridge is now connected by telephone with the headquarters of Captain Napier, the vessel dispatcher, whose office is on the dock at the foot of LaSalle avenue. The bridges at Rush, Wells, Lake, Kinzie streets and Chicago avenue, have been made signal stations, and their bridge-tenders have to report promptly to Captain Napier each vessel desiring to pass through. When instructed from headquarters, or whenever there are three or more vessels ready to pass, the bridge is opened and this is the signal to all the following bridges up to the next station to open promptly and let the fleet pass. For instance, when the Twelfth street bridge opens for vessels, outward bound, each following bridge opens promptly as far as Wells street. By this time, if enough of the vessels are bound so far, or if other vessels from the south branch have joined those from Twelfth street, the Wells street bridge will have been ordered open, and prompt egress afforded to the lake. The delay to the public is minimized, for the vessels come in due order instead of straggling along at intervals, and the vessels, on the other hand, are ensured an uninterrupted passage from station to station.

Improvement has also been made in the work of the bridge-tenders themselves, and a policeman has been placed at each approah to the principal bridges, who promptly stop all teams the moment the bell is rung, which enables closer figuring as to the opening of the bridge. It has been found that the total time during which the bridges are now kept open is considerably less than under the old system; and while the new order of things is not wholly satisfactory to vesselmen it seems to be a move in the right direction.

Thanks to the active measures taken by the Chicago vessel interests, aided by the Lake Carriers' Association, in its recent meeting at Chicago, there is no danger of any serious interference with the lake commerce.

THE annual report of Captain C. E. L. B. DAVIS, United States engineer, in charge of certain lake improvements, has been received by the chief of engineers. Captain DAVIS recommends that $60,000 be appropriated for next year's work in Ontonagon harbor, Mich., to be expended in further pier extension and in repairs. He recommends $200,000 for the harbor of refuge at Grand Marais, Mich., to continue pier construction. An appropriation of $9,000 is recommended for Menominee harbor, Michigan, but it is coupled with conditions that the money be withheld unless the Menominee river lumber company ceases its "unauthorized and improper use of the south pier," which consists of piling lumber thereon and mooring barges thereto. An appropriation of $2.000 is asked for Oconto, Wis., expenditures to be coupled with the condition that the people of Oconto keep in repair the works built by private enterprise. Thirty thousand dollars is asked for dredging purposes in Green Bay, Wis.; $20,000 for blasting and pier construction. in Ahnapee Harbor, Wis.; $5,000 for pier construction dredging and repairs at Kewaunee Harbor, Wis.; $5,000 for dredging at Two Rivers harbor, Wis.; $16.000 for rebuilding a part of south pier superstructure, and for dredging at Manitowoc harbor, Wis.; $50.000 for pier extension dredging and repairs at Sheboygan, Wis.; $12,000 for pier construction and dredging at Port Washington, Wis.

CAPTAIN J. W. MILLEN, of Detroit, recently wrote Gen. Dumont, chief of the steamboat inspecting service, that an agent of the service had insisted that the steamer Idlewild, of the Star line, which runs between Detroit and Toledo, should have certificates from both places, and had raised legal points in reference to the number of passengers and excursionists the boat was allowed to carry. The agents at Toledo, in fact, detained the steamer. Gen. DUMONT has replied to the effect that the Detroit certificate is sufficient for the Idlewild to go to any point on the lake, and that her certificate entitles her to carry 822 passengers instead of the number claimed by the agents, who have been a little overzealous in their idea of enforcing the navigation laws.

CHICAGO BRIDGE TROUBLE.

James L. Higgie, vessel owner, and president of the Vessel Owners' Towing Company, called upon the Professor B. Barrett to lodge complaint against vessel dispatcher Napier, the man who, seated in a shanty at the foot of LaSalle avenue, dispatches the craft navigating the Chicago river. "One of my vessels," said Mr. Higgie, "the Mary L. Higgie, left Diskies & Henier's coal dock on the North Branch, at 3 o'clock Tuesday afternoon. The tug Ferry had her in tow. On her way down she was held twice, at the Chicago avenue and Kinzie street bridges. Getting out into the main river, finally, she was again held at Wells street. Here she remained until Rush street bridge opened to permit a fleet up. Wells street opened and the Higgie again started. Going through Clark street bridge, the Ferry had to slow down, as the incoming fleet was coming on and through the draw across her bow. It was absolutely necessary to check her speed to avoid colliding with the last of the line of vessels. At 5:30 o'clock I drove over Rush street bridge and there my vessel lay, with nothing between her and the lake except the bridge, which could have opened in thirty seconds. They held her there half an hour. Getting out of my buggy I called up the dispatcher's office by telephone. 'Why don't you let the Mary L. Higgie pass?' I inquired. 'Because it will teach her a lesson in the future,' answered Napier. 'She was two minutes in passing through the draw of Clark street.' 'Is that the way you vent your spleen? You are making her do penance for a wrong, eh?' I said. 'None of your——business,' he replied. 'Who are you, any way?' 'My name is James L. Higgie,' I answered,' 'and I shall make it a point to see whether you are permitted to put your hands in a man's pocket because of an unavoidable delay consequent upon the crowded condition of the river.' "As soon as he found out who was at the other end of the wire he began making all sorts of apologies, and ordered the bridge opened instantly. Now the law is no respecter of persons, nor should the telephone system be. If I had been some poor man with a small interest in the vessel I would have been told to go to hades. This is wrong—flagrantly wrong, and should be remedied." Professor Barrett will investigate the matter. In this connection it may be stated that the innovation is working sad havoc with the commerce of Chicago, and complaint is universal. Several big owners have grown weary of doing business on Chicago's little waterway. Captain Ira H. Owen is among the number. His big freight carrying steamers, the Inter-Ocean, Argonaut, Escanaba, Rhoda Emily and Ira H. Owen, he says, will all be taken out of the Chicago trade at the expiration of existing contracts.

LOOKING AFTER THE LIFE-SAVERS.

The Buffalo Express of the 1st inst. says: Superintendent Kimball, of the life-saving service, who went to Youngstown and Fort Niagara Saturday in order to select the site of the new life-saving station to be built at the mouth of the Niagara river, returned to Buffalo last evening from Niarara Falls, where yesterday was spent. The party was made up of Superintendent Kimball, Hugh Thompson, assistant secretary of the treasury, and Superintendent Dobbins, of the ninth district of the life-saving service. They took the steamer Chicora at Lewiston and were met at Niagara city by citizens of Youngstown, who entertained them while they remained in the vicinity. Fort Niagara is soon to be increased in importance by being advanced to the dignity of a ten-company post. The government owns four hundred acres of land connected with the fort including a magnificent rifle range. It was found that Lake Ontario had been making some serious breaches in the walls of the old fort of late, and quite extensive repairs will need to be made to save the structure from ruin. The new station will be built on a point of land on the lake side of the fort at its southern end, and work will probably be done this winter. Superintendent Kimball takes the government steamer Perry to-day for Detroit, whence he proceeds on the Fessenden direct for Duluth. A station is also to be located there, after which he will return leisurely down the lakes, visiting all the stations on the way, and looking out locations for other stations, which have been partly decided upon. Superintendent Dobbins will meet him at Detroit or Marblehead and accompany him on his tour of the stations of the latter's district. The tour of Lake Ontario, also in the same district, will be made on the government steamer Bibb, which belongs to that lake service. While in Buffalo the station here was given a thorough inspection, and the crew put through their evolutions. The life boats were tested by overturning them in the water, etc. Much of this was new to Secretary Thompson, who came into his position only on the promotion of Mr. Fairchild to the position of secretary of the treasury. He was formerly governor of South Carolina, and served in the southern army as a colonel. If he was not up in life-saving matter he managed to surpass the rest of the company in another direction. On going aboard of the Chicora he immediately recognized her as an old acquaintance. He had a brother during the war who was a daring blockade runner, and the Chicora in those days was deep into the business. Though she has been greatly changed since that time she was enough the same old craft to betray her. He had seen her at Charleston too many times to be mistaken, and it appears that she was then known as the "Let 'er Be," while a duplicate craft was the "Let 'er Rip." When the war was over she was cut in two and brought up the St. Lawrence in sections and sent up the lakes. Proving a bad venture she was brought back here, cut in two again, taken through the Welland and put together in Lake Ontario. The changes of base undergone by both Secretary Hugh Thompson and the Chicora are very curious ones.

OBITUARY.

CAPTAIN GILBERT KNAPP.

Captain GILBERT KNAPP, the founder of the city of Racine, and the first white man who established a settlement in that part of the state, died at Racine last Saturday morning of old age and general debility. Captain Knapp was born at Benham, Mass., on December 3, 1798. He received such an education as the schools of his native place afforded, and made a special study of navigation. In the war of 1812 he shipped on board a man-of-war sailing under a letter of marque, and was engaged in several noted naval battles of that struggle. Having become acquainted with many noted naval men who belonged to Perry's force, he was persuaded to remain in the west, and study the geography of the great lakes. He was engaged in the naval service of the United States in explorations and in the revenue service at different times for nearly fifty years, and at the time of his death was off duty awaiting orders as the condition of affairs under those circumstances is technically termed. It was during some of his explorations that he become cognizant of the superior advantages offered by Wisconsin for a settlement. He raised a party to locate there and laid the foundation for the present Belle City. In the territoral days of Wisconsin, he took an active interest and was three times elected to represent the county of Racine, which then embraced all of the present counties of Racine, Rock, Kenosha, Walworth, and Milwaukee, in the territorial council. He was offered the representation to congress, but declined in favor of George W. Jones, who was subsequently elected senator. He served in the lower branch of the state legislation until the opening of the late war demanded his services. During that conflict he did good service on the coast and the great capes, and retired permanently in 1874. Captain Knapp was one of the best known men in the state, and was a pioneer among pioneers. His services to the government in different capacities were invaluable. He leaves a son, Gilbert, of Little Rock, Ark., and a daughter, Mrs. McClurg, of Racine.

CAPTAIN L. B. GOLDSMITH.

L. B. Goldsmith, one of the oldest captains on the lakes, died near Oakland, Mich., on Friday the 22d ult. Captain Goldsmith left Ashtabula with his steambarge, the Progress, bound up the lakes. The boat stopped at Oakland and while it was being tied to the dock the crew noticed that something was wrong about the captain's bell signals. Some of them went to the top of the pilot house, and there found Captain Goldsmith lying unconscious with the bell rope in his hand. He was taken as soon as possible to the home of a friend, Mr. W. D. Hart, near Oakland, where he soon died. The attack was apoplexy, and Captain Goldsmith did not regain consciousness after he was stricken down. The body was sent at once to the home of the deceased, at Kingsville, near Ashtabula. The funeral services occurred last Thursday.

Captain Goldsmith was 76 years old at the time of his death. He was one of the oldest and best steamboat masters on the lakes, and was known from Duluth to Buffalo. He commanded the Hendrick Hudson, one of the first steamers on the lakes, and in his time handled the bell ropes on the propellers B. F. Wade, Idaho, and Progress, and the old side wheelers Metropolis and Alaska. Captain Goldsmith leaves a wife snd four married children.

NOTICE TO MARINERS.

The Canadian deputy minister of marine gives notice that the light on Reformatory pier at Penetanguishene, Georgian bay, Ontario, which on admiralty charts Nos. 407 and 327 is described as being on the north side of the entrance, is in reality on the south side, and must be left on the port hand in entering the harbor.

LAKE FREIGHTS.

Rates remain strong and unchanged previous quotations with the exception of an advance of 5 cents on ore, Escanaba to Cleveland. Tonnage remains scarce, with a strong demand. Reports are current that there is an advance of 25 cents on lumber from the Saginaw district, but they are not fully verified. We quote:

ORE.	
Escanaba to Chicago	95c
Escanaba to Ohio ports	1.50
Marquette to Ohio ports	1.85
Ashland to Ohio ports	2.25
Two Harbors to Ohio ports	2.50
GRAIN.	
Wheat, Duluth to Buffalo	5½c
Corn, Chicago to Buffalo	2¾@3c
Wheat, Chicago to Buffalo	3@3¼c
Wheat, Milwaukee to Buffalo	3¾c
Wheat, Detroit to Buffalo	2⅞c
COAL.	
Buffalo to Milwaukee	1.00
Buffalo to Chicago	1.00
Buffalo to Duluth	75c
Cleveland to Milwaukee	1.00
Cleveland to Chicago	1.05
Cleveland to Duluth	85c
LUMBER.	
Bay City to Tonawanda	$2.25
Bay City to Ohio ports	2.00
Saginaw to Tonawanda	2.37½
Saginaw to Ohio ports	2.12½

AHOY! MARINERS!

The beacon light, which guides you safely in the harbor of pecuniary advantage is the Boston Dry Goods firm of *Kohn & Co.*, 213 Detroit st., near corner Pearl st., Cleveland, O., established since 1866 in this city, informing you of our specialty in supplying vessels with ☞ *Comfortables, Blankets, Table linen, etc* and that we *sew to order* at *shortest notice* ☜ *Sheets, Pillow cases*, or any necessary equipments for bedding.

☞ We are also pleased to inform you that we are the *only* manufacturers in this city who retail direct to consumers, none but *our own genuine home-made* ☞ *Flannel Shirts, Waterproof Shirts, Scarlet Flannel Undershirts* and *Drawers, Overalls, Jean Pants*, etc., or ☞ *make them to order* ☜ for the same price we sell them ready-made. ☞ All our Shirts are 52-inch wide, 36-inch long, extraordinarily well sewed. ☜ The *Custom Cutter*, associated with our merchant tailoring department offers to make *Gents' finest Cassimere, Broadcloth Suits*, in the *latest style*, guaranteeing the best fit and fine workmanship ☞ *for $8 less* ☜ than any other merchant tailor, because he has *no Rent to pay, does his own cutting*, and wants *to advertise himself*. Kohn & Co., 213 Detroit st., near corner Pearl, Cleveland, O.

Shipments for July from port of Bay City are as follows: Lumber, 48,000,000; shingles, 8,000,000; lath 4,000,000.

[*Around the Lakes Continued from 1st Page.*

BUFFALO.

Trout, of the King Iron Works, will build the machinery for the two vessels recently ordered by Hon. James Ash, to be built at Quayle's yard. The schooner will have hoisting engines.

Captain Wimett's new steam canal boat, Lady Wimett, left Lockport on Saturday for Buffalo with a consort. She was built by Morgan Bros., and is pronounced a beauty. The cost is $6.300.

Commander Gridley, the new lighthouse inspector, ordered to relieve Commander Dyer, assumed charge of this district Monday.

Not succeeding in bringing the Anchor line to time by the strike at Erie, the knights of labor are at work here trying to induce company men to strike, but they meet with no success so far. The propeller Empire State will not be able to make her time to Duluth this trip on account of detention for repairs. Instead of leaving here Wednesday she will not be ready till Saturday. In order to regain lost time she will only stop at Detroit, Port Huron, and the Sault on next round trip.

The new propeller Chenango arrived Tuesday uninjured by her detention on the rocks at the lime kilns.

The receipts of flour at Buffalo by lake during the month of July, 1887, compared with the receipts for the corresponding month in 1886, shows an increase of 19,225 barrels. In wheat there is an increase of 1,993,646 bushels; in corn a decrease of 696,757 bushels; in oats an increase of 285,546 bushels; in barley a decrease of 550 bushels and in rye an increase of 8,000 bushels. The total increase for the month in all kinds of grain is 1,619,885 bushel , and in all grain, flour being reduced to wheat, 1,715,010 bushels. Compared with last season the receipts to August 1 show a decrease of 349,131 barrels of flour; in the total grain an increase of 8,305,854 bushels; and in all grain, flour being reduced to wheat, an increase of 6,586,196 bushels.

From a memorandum book found on the body of the sailor drowned in the Ohio slip at the swinging bridge, Buffalo, on the 29th ult., the drowned men is thought to be Adolph E. Strauss of West Bay City, Mich., who shipped on the schooner Levi Bronson, April 25.

The Commercial Advertiser says: Notwithstanding the unusual and intense heat, or the mid-summer dullness so general all over the country, the trade of Buffalo continues to move off in magnificent proportions. Large as was the movement of grain last year, it is much larger this. From the opening of navigation to July 30, 1886, the receipts of grain were 41,114,000; bush. this year they are 47,083,000. The receipts of lumber were also heavy, reaching 43,000,000 feet for the month, and 115,170,000 for the season, a gain of 15,000,000 feet over last year. The outward movement has been proportionately large. The shipment of anthracite coal to the west agregates 764,637 tons, a gain over last year of 109,000 tons. The shipments of lake grain by rail are 15,496,000 bushels to 10,881,000 last year. By canal the exports to the east reach 22,000,000 bushels to 18,912,000 last year.

About twenty laborers on the breakwater repairs became dissatisfied and appealed to the government engineer for an advance of wages. He refused and discharged them. They were merely stonebreakers getting fifteen cents an hour, and a general strike is not expected, though Erie strikers are still here trying to induce freight handlers to go out.

Captain John C. Pringle has sold his quarter interest in the steamer of the same name, of which he was master, to Geo. H. Hollister, of Rochester, for $15,000. The vessel was formerly the W. H. Gratwick, and is said to have been sold entire last fall, for $50,000. The present sale grew out of a difference concerning the make up of the Pringle's tow. The captain objected to four barges, but the other interests persisted and he stepped out. Captain Fred Emery, of the Sweetheart, will sail the Pringle. Captain August Jean, of the Sunshine, is transferred to the Sweetheart. The barge H. B. Gardner with the above named boats remains with the tow, but the Gebhart drops out and enters the Saginaw trade.

Excursion steamer Mascotte has arrived from Toledo, and will run across the foot of the lake from Buffalo to Fort Erie Grove.

EAST SAGINAW.

Lumber, 20,000,000 feet; shingles, 2,250,000; lath, 1,000,000 feet. The shipments for the entire river show a falling off of 6,000,000 feet, and a slight gain in shingles and lath compared with July last season. Had tonnage been plentiful the output of the forest products would have been much larger.

DETROIT.

The rebuild of the tug Oswego is finished. She has been greatly improved and looks much better than before her accident.

The steamship building at Detroit drydock for James McMillen and others will be completely fitted out before launching.

On Wednesday afternoon of last week the Riverside Iron Works received an order and began the mold for a propeller wheel 10 feet 8 inches in diameter, for the steambarge Schoolcraft.

The steamer E. K. Roberts received an overhauling at Detroit drydock last week.

The new steel steamship Ira H. Owen, recently launched at Cleveland, was greatly admired by vessel men as she passed up on her first trip.

The propeller Vernon, which was recently sold in this city, has been chartered by the Northern Michigan line for the remainder of the season, and will take the place of the propeller Champlain, burned some weeks ago off Charlevoix.

The new steambarge Chenango, wheat laden, on her maden trip from Detroit to Buffalo, ran hard on at the Limekilns last Saturday evening. She was pretty hard on the east bank and about one hundred feet out of the channel. She was released at 9 o'clock Monday night. The captain is a good man and he knows the channel, but the steering gear of the new boat fouled.

There was a big fire on the Detroit docks in the neighborhood of Grummond's warehouse Sunday night. Captain S. B. Grummond is the heaviest of a dozen losers. Marine apparatus and other property valued at $25,000 was destroyed. The insurance was only $10,000. The propeller Alaska narrowly escaped burning.

TOLEDO.

Special to the Marine Record.

The double screw, steel hull propeller Mascotte of this port has been sold to the international ferry company of Buffalo. The Mascotte is considered one of the best built and fastest boats on the lakes. She is but a year old. The Mascotte leaves for Buffalo Monday. It is reported the Toledo marine company has purchased the Detroit ferry Sappho to replace her. Consideration for the Mascotte is said to be about $22,000.

Toledo has two full fledged tug associations, and the anticipated cut in towing rates has already been verified. The two big tugs of the harbor—the Christian and Pathfinder—go into cahoots with the Spinney to do transferring. The Spinney, however, is not in the association. The tugs Andrews, Green, Rooney, Farragut and Syracuse remain with the old association. It is understood that an attempt was made to fix towing rates for the remainder of the season—rates that both associations should live up to. The attempt was, however, a failure, and some tall cutting is anticipated.

Tug business has been poorer here this season than any season for years.

Large vessels bound for Buffalo now tow below the island.

The tugs Pathfinder, Chisholm, and Spinney, are backing the old association and making things lively. E.

TONAWANDA.

The steamer Edward Smith, owned by the Gratwick, Smith & Fryer Lumber Co., has just accomplished a wonderful feat that has set marine and lumber circles to talking. On the 23d ult. she came down with her four barges, having an aggregate cargo of 3,000,000 feet of lumber. This was unloaded on the firm's docks in one day, and the steamer and her tow returned to Oscoda, Mich., where they took on 3,000,000 feet more in a day and a half. This cargo was brought in last Saturday morning, the 30th, and unloaded in one day. The steamer's tow thus gets a record of making a distance of 912 miles and handling 9,000,000 feet of lumber in exactly one week. Captain Alfred Mitchell, of the steamer, is justly proud of his accomplishment, and received congratulations from every one.

SAND BEACH.

Special to the Marine Record.

As the season progresses the harbor of refuge is becoming more popular with the sea-faring fraternity. Last week the following craft sought shelter here: Propeller Point Abino, tugs Sweepstakes and Dickson, propeller Michigan and three barges, S. E. Curtis, City of Mt. Clemens, Missouri and one barge, schooners Garibaldi, Minnie Davis, Home, Mona, Eugene Vesta and D. Provost.

The pleasure yacht Sigma, of Toledo, with a large party on board, anchored in the harbor Saturday. LUFF.

MINORVILLE.

Latham & Smith of Sturgeon Bay having purchased the barge Emerald, wrecked at Kewanee last fall, are engaged in an attempt to release her, with good prospects of success.

VESSEL OWNERS AND AGENTS.

H. J. WEBB & CO.,

Ship Brokers, Vessel Owners and Agents.

[ESTABLISHED IN 1856.]

H. J. WEBB & Co., will charter Vessels for Lake Trade. Special attention given to Chartering Vessels in the Lake Superior Iron Ore Trade, both for the season and single trip.

ARCADE BUILDING, 101 ST. CLAIR ST.,

Room 27. Cleveland, Ohio.

TELEPHONE { Office, No. 338. Residence, No. 1328.

WARNER & BECKER,

Vessel Agents and Brokers,

ROOM 10,

Arcade B'ld., 101 St. Clair St.,

CLEVELAND, OHIO.

J. J. H. BROWN. EDWARD SMYTH

BROWN & CO.,

Ship Brokers and Agents.

Special Attention given to Surveying, Appraising and Settling Marine Losses.

Exchange Building, 202 Main-st., Buffalo, N. Y.

ALEX McDOUGALL,

VESSEL AGENT AND BROKER,

Duluth.

Owners and masters of vessels wishing to get cargoes of grain from this port will do well to confer with me. Will be glad to furnish information in regard to cargoes, also in relation to docks, depth of water, etc., at **Duluth, Agate Bay** (new iron ore port), **Port Arthur, Washburn, Ashland,** and all points near the west end of Lake Superior. Good gangs of men furnished on short notice for trimming cargoes of grain, loading and unloading all kinds of freight.

PALMER & BENHAM,

Vessel Owners & Agents,

New Bank Building, corner of Superior and Bank Street, Cleveland, Ohio.

MOORE, BARTOW AND GILCHRIST,

Ship Brokers and Agents,

No. 101 St. Clair Street, Room 15.

CLEVELAND. - OHIO.

JAMES T. ROSE,

Vessel Agent and Broker,

Room 4, Exchange Building, Duluth, Minn.

I have an excellent gang of Trimmers this season, Captain Miller's old Crew.

Special Attention Paid to Chartering Vessels, and seeing that they get dispatch in Port.

CORRESPONDENCE SOLICITED.

THOS. WILSON

MANAGING OWNER

Wilson's Transit Line.

Gen. Forwarder. Freight and Vessel Agent.

CLEVELAND, O.

JOHN P. DEVNEY,

Marine Collector.

Collections Promptly Attended to.

ASHTABULA HARBOR, OHIO.

PROCTORS IN ADMIRALTY.

Removal!

William H. Condon,

MARINE LAWYER,

240 La Salle cor. Jackson st.

CHICAGO, ILL.

ROBERT RAE,

Admiralty and Insurance Law Office,

Room 37. Merchants' building, CHICAGO. ILL.

WM. H. DeWITT,

Attorney and Proctor in Admiralty.

ROOM No. 6, BLACKSTONE BLOCK.

CLEVELAND, OHIO.

GEORGE E. HALLADAY.

Attorney and Proctor in Admiralty.

Marine Business Promptly Attended To.

OFFICE 21 BUHL BLOCK, DETROIT, MICHIGAN.

CAPT. ALEX. McHARLAND.

Iron Ore Trimmer and Contractor,

ASHLAND, WIS.,

Has a large gang of men, and is in a position to give prompt attention to all orders intrusted to him.

SATISFACTION GUARANTEED IN EVERY RESPECT

C. A. KING,

General Stevedoring. Discharging Loading and Ore Trimming Promptly Attended to. A Large Force of Men always on Hand. Information in regard to

DEPTH OF WATER OF ALL DOCKS IN

ASHLAND HARBOR

gladly furnished. Quick dispatch guaranteed. Patronage Solicited.

C. A. KING, Ashland Wis.

Grummond's Mackinac Line

Stmr. Flora, W. E. Comer, Master, Leaves TOLEDO every Tuesday at 9 a. m., City time,

Stmr. Atlantic, J. R. Jones, Master. Leaves CLEVELA'D every Friday at 9 p. m., City time,

For Mackinac, St. Ignace, Cheboygan, Alpena, Oscoda and way ports. For Freight or Passage apply to ANDERSON & BATES, Agents, Dock Foot of Superior street, Cleveland, O.

S. B. GRUMMOND, Owner, Detroit, Mich.

A. J. MORSE & SON.

HULL'S

RUBBER STORE.

SPECIAL GRADES OF

WATER AND STEAM HOSE

FOR MARINE USE.

Steam Packing, Gaskets. Valves, etc., etc.

Rubber clothing, boots & shoes.

E. W. HULL,

237 Superior-st, CLEVELAND, O

Send for Price List.

CANVAS OIL BAGS

for use on board Vessel and Steamer to lessen the dangerous effects of heavy seas. Write for pamphlet.

M. H Dodge & Co., 24 Broadway, Cleveland, O

GEORGE SAAL'S SON.

Copper-smithing of all Kinds.

VESSEL WORK A SPECIALTY.

403 and 405 Detroit-st., corner Duane-st.. Telephone 1638. CLEVELAND, O.

MARTIN MULLEN, Agent,

DEALER IN

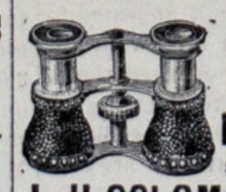
Youghiogheny & Massillon Coal

DOCKS AT GOVERNMENT PIER AND RIVER BED SLIP.

Office, 81 Perkins Building, East Side of Main Street Bridge, CLEVELAND, OHIO.

Telephone No. 2701.

BOATS COALED DAY OR NIGHT.



Marine Glasses AND **Barometers !**

Spring import just received at

L. H. SOLOMONSON'S, Optician,

252 SUPERIOR-ST., CLEVELAND, O.

DAVID BARNHISEL, Agent.

DOMESTIC & STEAM COAL

Cleveland, Ohio

VESSELS SUPPLY STORE.

SPIEGLE BROS.

MARINE SUPPLY STORE

WHOLESALE AND RETAIL

Grocers. Bakers and Ship Supplies;

Fresh & Salt Meat of all Kinds.

30 & 32 River-st., opposite Detroit Steamboat Landing, and 184 Broadway. Telephone 112, CLEVELAND, OHIO.

SHIP AHOY!

WHEN YOU ARRIVE AT SARNIA BE SURE TO CALL AT

CAPT. A. E. McGREGOR'S, FRONT ST., FOR GROCERIES AND PROVISIONS;

ALSO, AT

W. A. BUCHNER'S, OPP. CITY HALL for Fresh and Cured Meats, Ice, etc. Prompt delivery. Open day and night.

A. E. McGREGOR, Grocer. W. A. BUCHNER, Butcher.

S. B. GRUMMOND,

OWNER OF FIRST-CLASS

Tugs for Wrecking, Raft Towing, Etc.

ALSO, 16 STEAM PUMPS, ROTARY AND WORTHINGTON,

Improved Horizontal Straight Base Hydraulic Jacks.

Sub-marine Divers, Hawsers, Lighters, Etc.

WAREHOUSE AND OFFICE ON DOCK. BET. FIRST AND CASS STS,

OWNER OF TUGS 'Winslow,' "Leviathan,' 'M. Swain,' 'Champion,' 'Wm. A. Moore,' and 'Oswego. } **Detroit, Mich.**

☞OFFICE OPEN DAY AND NIGHT. SATISFACTION GUARANTEED.☜

BRANCH OFFICES at PORT HURON & CHEBOYGAN, MICH

WRECKING TUG

LEVIATHAN, CAPT. M. SWAIN, STATIONED AT CHEBOYGAN

HOWARD H. BAKER & CO.,

Ship Chandlers & Sail Makers.

WHOLESALE AND RETAIL DEALERS IN

Cordage, Wire Rope Blocks, Canvas, Anchors, Chains, Paints, Oils, Naval Stores, etc.

Cylinder, Lard, Signal and Lubricating Oils a Specialty.

AGENTS FOR THE

American Ship Windlass Company for Lakes Erie and Ontario.

IMPORTERS OF NAUTICAL INSTRUMENTS OF EVERY DESCRIPTION.

We carry a larger assortment of goods in our line than any other house in the trade and can not be undersold.

Call at Our Mammoth Store and See for Yourselves.---18, 20, 22, 24 & 26 Terrace,

BUFFALO, NEW YORK.

The J. P. Donaldson Co.,

Ship Chandlers,

SAIL MAKERS AND RIGGERS,

Manufacturers of OARS and OAR LOCKS, Dealers in

Cotton Duck, Wire Rope,

Cordage, Etc.

22 and 24 Woodward Ave.,

DETROIT, MICH.

D. S. AUSTIN. EMMET AUSTIN.

D. S. AUSTIN & CO.

Ship Chandlers & Sail Makers.

WHOLESALE AND RETAIL DEALERS IN

Cotton Duck, Cordage, Wire Rope, Oakum, Pitch, Tar, Paints, Oils, etc.

Complete Outfits of Sails, Rigging, etc., for Vessels and Steamers, furnished on short notice and at as low prices as any one on the Lakes.

Ft. of Washington St., BUFFALO, N. Y.

GEO. C. FINNEY. JAS. CHANNON

Finney AND Channon,

Ship Chandlers & Sail Makers,

Manila, Hemp and Wire Rigging.

Blocks, Anchors, Chains, Paints, Oils, etc.

Special Attention Given to Out-fits and Repairs.

270 and 272 South Water St.,

CHICAGO, - - ILLINOIS.

J. W. GROVER & SON,

SHIP CHANDLERS

SAIL MAKERS AND RIGGERS,

IMPORTERS AND WHOLESALE DEALERS IN

Wire Rope, Manila and Tarred Cordage, Canvas, Blocks, Oakum, Tar, Pitch, Oars, Anchors, Chains, etc.

117 & 119 RIVER ST., & 134 & 135 DOCK, CLEVELAND, OHIO.

H. L. SHAW,

EAST SAGINAW, - - - MICH.,

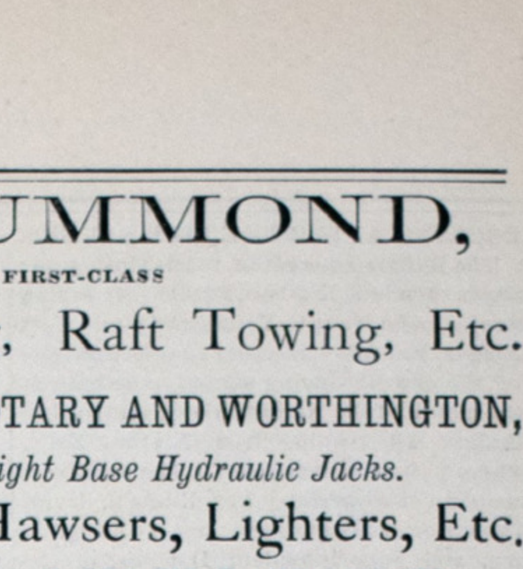
VESSEL BROKER, AGENT AND OWNER

Special attention given to charters for the LUMBER COAL AND STONE TRADE.

Vessel property and machinery bought, sold and exchanged. If you have anything to sell or want to buy write me; no commission unless sale is made.

MARINE COLLECTIONS PROMPTLY ATTENDED TO.

Tugs and Lighters always on hand. Correspondence solicted.



Cleveland Block Co.,

MANUFACTURERS OF

Iron Tackle Blocks

TAKING THE PLACE OF WOODEN BLOCKS FOR ALL PURPOSES.

159 River St., CLEVELAND, O.

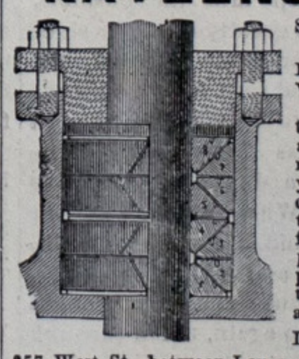
ROPE NETTING

For Steamers and Steam Yachts a Specialty.

E. A. EVANS, Rigger,

193 South St., New York.

KATZENSTEIN'S



SELF-ACTING METAL PACKING

FOR PISTON RODS, VALVE STEMS, Etc.

Adopted and in use by the principal Iron Works and Steamship Companies within the last eight years in this and Foreign countries. Also flexible tubular metallic packing for slip-joints on steam pipes and for hydraulic pressure. For full particulars and references address

L KATZENSTEIN & CO

357 West St., between Leroy and Clarkson-st, N. Y.

CAPT. THOS. WILSON, who uses this packing on his Steamers, and THE MARINE RECORD are Agents for Cleveland and the Lakes.

A. H. MILLS'

Harbor and River Tug Line

Detroit, Mich.

Office No. 8, Foot of Woodward Ave., on the Dock.

Telephone No. 508.

Tugs Shoo Fly, Dave and Mose.

Steam Pumps and Divers on Short Notice.

DETROIT & CLEVELAND

STEAM NAVIGATION CO.,

BETWEEN

CLEVELAND & DETROIT,

MACKINAC ISLAND, ST. IGNACE,

ALPENA, SAND BEACH,

PORT HURON, ST. CLAIR,

OAKLAND HOUSE, MARINE CITY

Special Sunday Trips

BETWEEN CLEVELAND AND DETROIT

DURING SUMMER MONTHS.

For full information, rates, tickets, etc., apply to E. B. WHITCOMB, Gen. Pasgr. Agt., Detroit, Mich, T. F. NEWMAN, General Agt, Cleveland, O.

Travelers Information Bureau,

224 Bank St., CLEVELAND O.

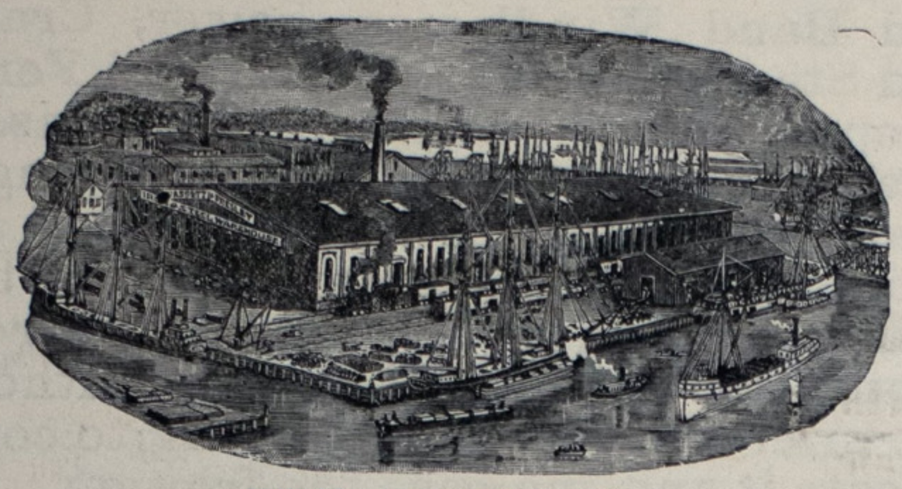
Where may also be found a full line of ocean ticket

IRA B. BASSETT GEORGE PRESLEY, Jr.

BASSETT & PRESLEY,

[Successors to W. H. McCurdy & Co.]

Office and Warehouse, cor. Elm & Hemlock Streets, Cleveland, O.



WHOLESALE DEALERS IN

BAR, BOILER HOOP, ANGLE AND SHEET IRON.

Nails, Railroad and Boat Spikes, Boiler, Tank and Cooper Rivets, Swedes Iron, Boiler Tubes, Nail Rods, Etc., Etc., Etc.

We Represent in this Market the Following Well-known Manufacturers:

Andrews Bros. & Co.....Youngstown, O. BAR IRON AND POLISHED SHAFTING.	Dilworth, Porter & Co., Limited..Pittsburg, Pa. RAILROAD AND BOAT SPIKE.
Reading Iron Works.....Philadelphia, Pa. BOILER TUBES.	Hoopes & Townsend,.....Philadelphia, Pa. BOILER AND TANK RIVETS.
Central Iron Works.....Harrisburg, Pa. BOILER PLATES.	Sanderson Bros. Steel Co,.....Syracuse, N. Y. CAST STEEL.
Lindsay & McCutcheon,.....Pittsburg, Pa, HOOP, BAND & STAR HORSESHOE IRON.	Joseph Corns & Sons .....Massillon, O. CROWN STAY BOLT IRON.
George W. Johnson,.....Newcastle, Pa. TANK SHEET IRON.	Pencoyd Iron Works,.....Philadelphia, Pa. ANGLE IRON.

A Complete Stock of all above Goods in Our Warehouse.

SAMUEL F. HODGE & CO.,

MANUFACTURERS OF

MARINE,

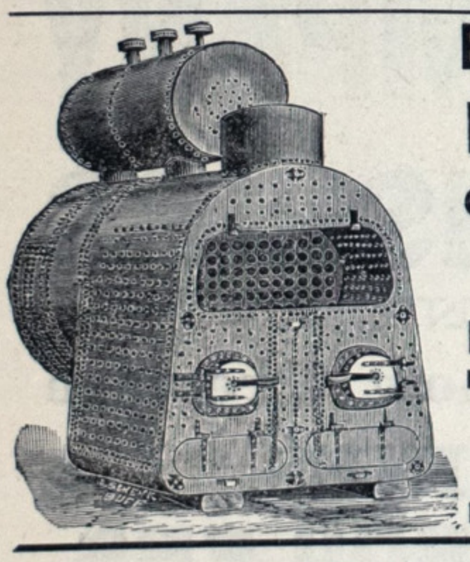
Stationary & Portable Engines,

MINING MACHINERY AND

PROPELLER WHEELS,

Riverside Iron Works, 314 to 326 Atwater Street,

DETROIT, MICH.



EAGLE BOILER WORKS,

M. RITER, Prop'r,

Cor. Indiana & Mary St.,

BUFFALO, N. Y.

MANUFACTURER OF

High and Low Pressure

Marine, Stationary, Portable, Locomotive and Upright Boilers; also, Salt Pans, Smoke Pipes and Heavy and Light Plate Iron Work of all Descriptions.

REPAIRS PROMPTLY ATTENDED TO.

O. & P. COAL CO. & THOS. AXWORTHY.

FUEL DEPARTMENT.

PRESLEY, ARTHUR & CO., AG'TS.

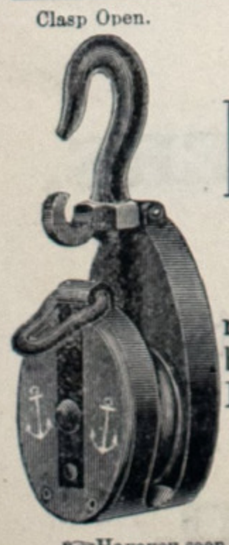
Steamboats, Tugs, etc, Coaled Day and Night.

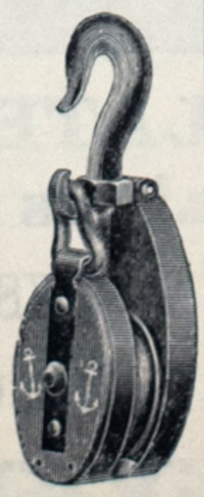
DEALERS IN LACKAWANNA ANTHRACITE COAL.

Docks: Ft. West River St., Whisky Island, C. P. R'y. Slip, Government Pier

OFFICE 130 RIVER-ST., CLEVELAND, OHIO.

Clasp Open. Clasp Closed.





LOCKPORT PATTERN,

Improved Snatch Block,

Ahead of All Others.

Reliable in every way; easiest to operate. Extra Wide Mortise. When bushed with our Celebrated Phosphor Bronze Self-Lubricating Bushing it's o.k Sample Orders Solicited.

Penfield Block Co.,

LOCKPORT, N. Y.

☞Have you seen our new Cargo Hoisting Block? Also our Special Wrought Iron Block for Wire Rope?

ST. MARY'S, OHIO. } OAR MILLS. NEPTUNE ANCHOR WORKS
MONTPELIER, OHIO.

DEGRAUW, AYMAR & CO.,

MANUFACTURERS AND IMPORTERS OF

CORDAGE, OAKUM, WIRE ROPE,

CHAINS, ANCHORS, OARS, BLOCKS,

COTTON AND FLAX DUCKS, FLAGS

BUNTINGS, RUSSIA BOLT ROPE,

MARINE HARDWARE AND SHIP-CHANDLERS' GOODS GENERALLY.

Nos. 34 AND 35 SOUTH STREET, NEW YORK.

A PUZZLE.

Which Man is the Tallest?

If you measure carefully the figures in above Cut you will find the man who appears the shortest is in reality the tallest. If you will coal your boat at my dock, adjoining S. F. Hodge Iron Works, you will get better dispatch and better COAL than at any other place in the city.

O. W. SHIPMAN,

OFFICE:

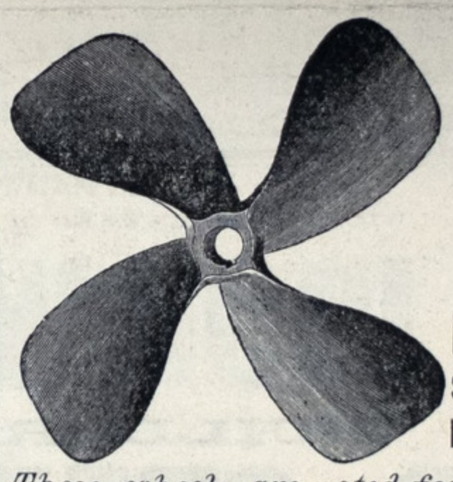
Cor. Griswold and Larned Sts.

H. G. TROUT,

KING IRON WORKS,

BUFFALO, N. Y.,

MANUFACTURER OF



Triple Expansion Marine Engines,
Three Cylinder and Fore and Aft and Steeple Compound Marine Engines,
High and Low Pressure Engines.
SECTIONAL PROPELLER WHEELS,
PROPELLER, TUG & YACHT WHEELS

These wheels are noted for their extra speed and towing power, or a proportionate saving of coal.

PRICES QUOTED ON APPLICATION.

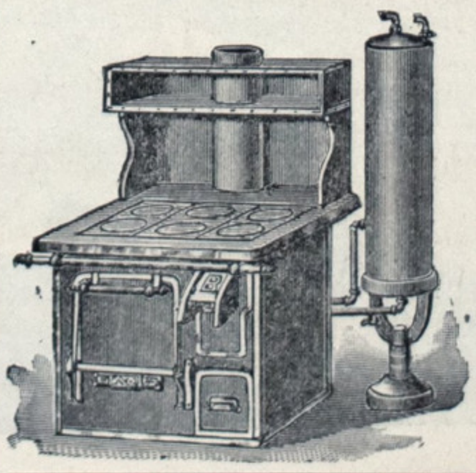
F. & H. BORN,

MANUFACTURERS OF

STEEL PLATE FRENCH RANGES

For Steamboats and Vessels,

Hotels, Restaurants and Private Families.



The Best Material Used

EVERY RANGE WARRANTED PERFFCT.

Adapted for Hard or Soft Coal, Coke or Wood.

Broiler and High Hot Closet and Steam Table Attached.

BORN'S STEEL PLATE FRENCH RANGES are now in use on many Vessels and Steamboats, the owners of which testify to their durability, economy of fuel, conveniance and elegance of finish.

F. & H. BORN,

128 Superior st., CLEVELAND, O.

JUST PUBLISHED. *NOW READY*

LEWIS' MARINE MANUAL,

A SUMMARY OF THE LAW

RELATING TO OR IN ANY WAY CONNECTED WITH THE

Shipping Mercantile and Marine Interests of the Lakes

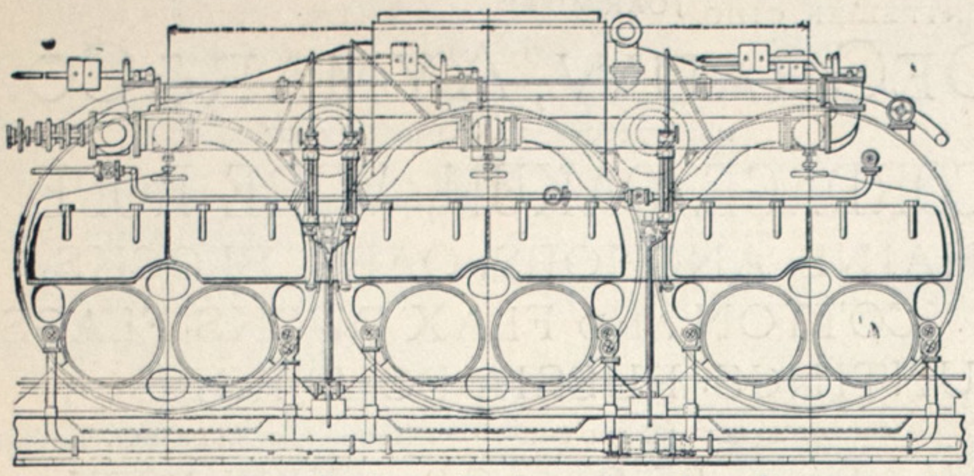
And the Sea-coast Waters of Canada and the United States,

By EDWARD N. LEWIS, Proctor in Maritime Courts.

OVER 500 PAGES - - - PRICE $2.50

Address MARINE RECORD OFFICE, Cleveland, O.

LAKE ERIE BOILER WORKS.



The best equipped plant in America for the manufacture of Modern Marine Boilers

BUFFALO, NEW YORK

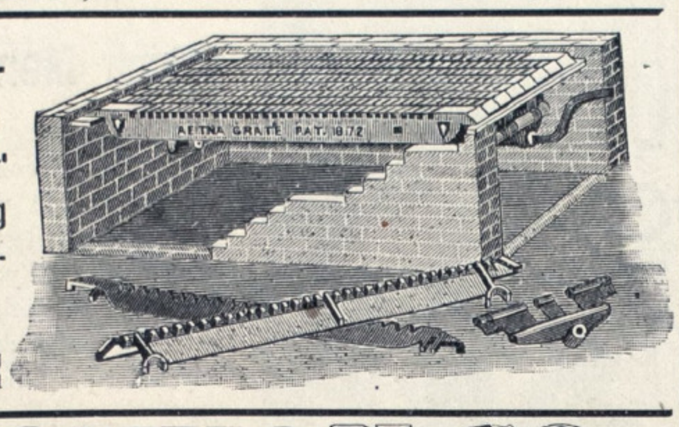
THE ÆTNA GRATE.

G. C. BARNES, Agt.

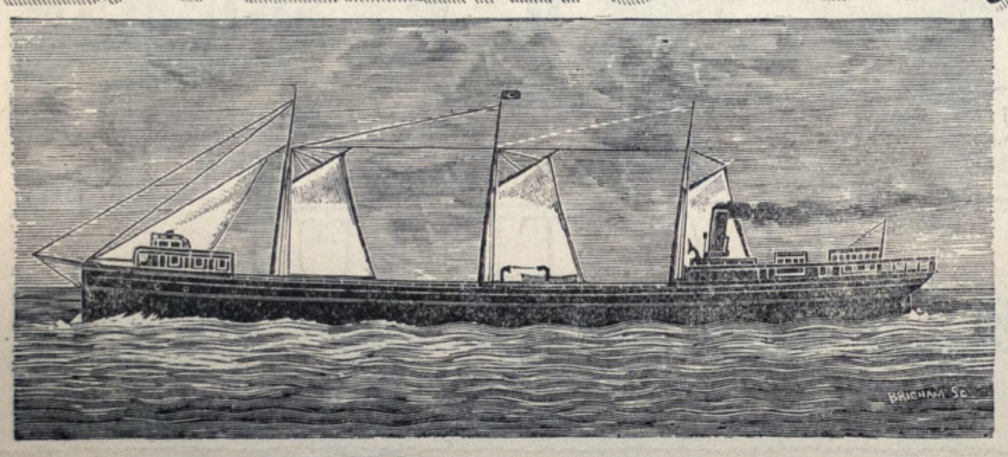
This Improved Shaking Grate Especially Adapted to Burning Slack.

Globe Iron Works, Manufac's.,

Office and Foundry, corner of Elm and Spruce-sts., CLEVELAND, O.



H. O'HANNON CO.,



Ship Chandlers, Sail Makers and Riggers.

STEAM-BOAT SUPPLIES.

22 to 26 Market-St., near Randolph-St., Chicago, Ill's.

Established in 1857.

AMERICAN SHIP WINDLASS CO.,

Builders of Steam, Messenger Chain and Hand Windlasses, Power, Crank and Steam Capstans, Wharf and Ferry Drops. Their Capstan Windlasses have a Power Capstan with a single head which has power and speed arrangement entirely independent of the Windlass, and which makes a direct connection with the Windlass without the intervention of any gearing to complicate it and inc ease the friction.

In all their styles of Steam Windlasses they make a direct connection between the engines and the windlass without counter shafts or additional gearing. This saves friction and liability to break down, and conduces to durability and ease in operating. They also have a counterbalance for the engines and an automatic lubricator for worm and worm gear. and the engines are placed together in the most accessible position. The above improvements and others too numerous to mention, but which are familiar to Masters, Owners and Builders, are covered by Patents owned exclusively by this Company. For plans and information

Address,

FRANK S. MANTON, Agent. P. O. box 53, Providece, R. I.

H. M. HANNA, PRESIDENT. JOHN F. PANKHURST, VICE PRESIDENT AND GENERALMANAGER. LUTHER ALLEN, SECRETARY AND TREASURER

THE GLOBE IRON WORKS COMPANY

BUILDERS OF

IRON AND STEEL STEAMSHIPS

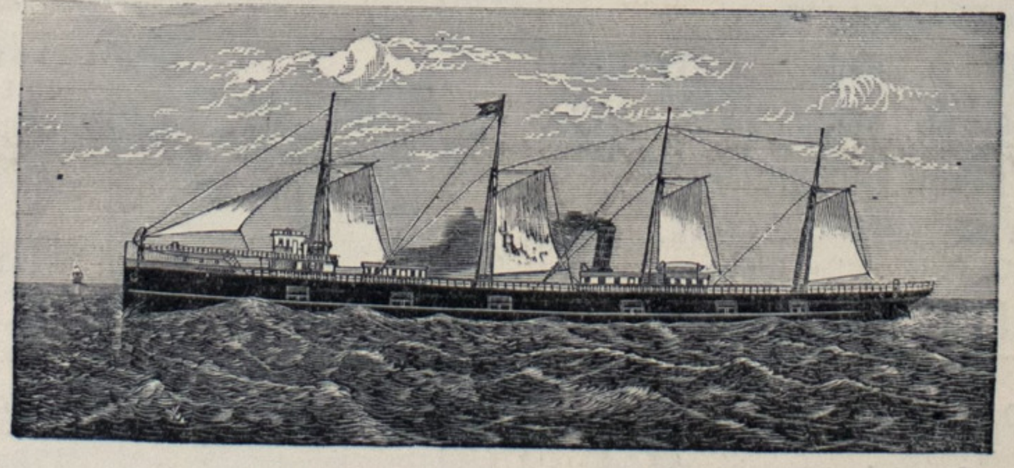
AND VESSELS OF ALL DIMENSIONS,

Triple Expansion, Compound, High Pressure and Low Pressure

MARINE AND STATIONARY ENGINES,

MARINE, STATIONARY & PORTABLE BOILERS.

Blast Furnace and Rolling Mill Machinery, Hoisting and Pumping Engines, Portable Hoisting Engines.



Steam Pumps, Steam and Hand Windlasses, Winches, and Marine Appliances of Every Description.

GENERAL SHEET AND PLATE IRON WORKERS,

Machinists, Boiler-Makers and Founders.

Builders of

Iron Steamships "Onoko," "Wm. Chisholm," "J. H. Devereux," Etc.
Steel Steamship "Spokane."
Passenger Steamer "Darius Cole."
Steam Yacht "Twilight."
Iron Tugs "International" and "Record."

OFFICE & WORKS, Spruce and Elm Streets.

IRON SHIP YARD, Old River Bed, foot of St. Paul St

CLEVELAND, OHIO.